

## REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 20-37 are presently active in this case; Claims 8-14 and 17-19 having been canceled; and Claims 20-37 added by way of the present amendment.

In the outstanding Office Action, Claims 8-14 and 17-19 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 8-14 and 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castera et al (U.S. Patent No. 4,341,998).

In order to clarify Applicants' invention, Claims 8-14 and 17-19 are canceled and new Claims 20-37 are added. New Claims 20-37 find support in the disclosure as originally filed, for example, in non-limiting Figs. 2-5.<sup>1</sup> With respect to the word "broken," that recitation finds non-limiting support in Applicants' specification, for example, at page 7, line 18. Therefore, new Claims 20-37 are not believed to raise a question of new matter.

In response to the rejection under 35 U.S.C. § 112, second paragraph, regarding the expression "median line," that recitation is not used in the new claims. With respect to the word "channeling," this word is commonly used in the field of magnetism and refers to the magnetic field being "guided" or "directed" along a particular direction within the circuit. A magnetic circuit thus "channels" a magnetic field. Accordingly, a person skilled in the art of magnetism would understand what is meant by "channeling" in view of Applicants'

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<sup>1</sup>See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

specification.<sup>2</sup> In view of new Claims 20-37, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In response to the rejection under 35 U.S.C. § 103(a) based on Castera et al., Applicants respectfully request reconsideration of this rejection and traverse the rejection as discussed next.

Briefly recapitulating, Applicants' invention relates to a magnetic circuit and a process of manufacturing the same. The claimed magnetic circuit includes a magnetic layer that channels a magnetic field. The magnetic layer is broken, either by walls of a magnetic material (Claims 20-23 and 30-33) or gaps (Claims 24-30 and 34-37). The walls and gaps are perpendicular to the direction along which the magnetic field is channeled. Advantageously, the claimed walls and gaps lower the magnetic permeability of the magnetic circuit, which permits the magnetic circuit to operate at relatively higher frequencies so as to provide a broader range of operating frequencies for the magnetic circuit.<sup>3</sup>

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<sup>2</sup>See MPEP 2173.02: "Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;  
(B) The teachings of the prior art; and  
(C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made."

See also same section: "The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. . . . Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire."

<sup>3</sup>See for example Applicants' specification at page 4, lines 18-25 and page 7, lines 18-29.

It is interesting to note the Office Action's comment that "the steps of 'channeling' the magnetic flux and 'forming' the gaps seem inconsistent"<sup>4</sup> because this combination is a distinct element of the invention. Forming the claimed gaps (or walls) reduces the permeability of the circuit by cutting the magnetic lines. These gaps create a highly effective demagnetizing field in the circuit.<sup>5</sup> In a sense, the Examiner's reaction is correct: forming gaps (or walls) in the magnetic layer perpendicularly to the channeling direction of the magnetic field is counter intuitive. However, it is precisely the formation of these gaps (or walls) that create a demagnetizing field, which lowers the magnetic permeability and increases the frequency limit, as explained in Applicants' specification.<sup>6</sup> That is the reason why gaps are formed in the circuit. The above Office Action's comment can thus be seen as an indication that the claimed invention is not obvious since forming the gaps appears to be contrary to the channeling function.

Turning now to the applied prior art, the Castera et al patent does not render the claimed invention obvious. Applicants respectfully disagree with the Office Action's presentation of this patent. In particular, the Castera et al patent discloses neither 1) "a process for increasing the operating frequency of a magnetic circuit," nor 2) "grooves/gaps being formed within a substrate," nor 3) "insulating layers being formed within the circuit."<sup>7</sup> Instead, the Castera et al patent discloses a magnetometer having two magnetic layers 2a, 2b with transducers 5a, 6a and 5b, 6b formed by metallic strips deposited on said magnetic

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<sup>4</sup>See outstanding Office Action at page 2, 2<sup>nd</sup> and 3<sup>rd</sup> full paragraphs in Item 2.

<sup>5</sup>See e.g., Applicants' specification at page 4, lines 21-23

<sup>6</sup>See in particular, page 4, line 29 "The more gaps..." to page 5, line 3 "... its frequency tolerance."

<sup>7</sup>See outstanding Office Action at page 3, Item 4.

layers. The magnetic layers 2a, 2b are not continuous but contain a system of grooves 3a, 4a and 3b, 4b, so that these layers form gratings (similar to diffraction gratings in optics). The magnetic field Ha and Hb, channeled by the magnetic layers 2a and 2b, are parallel to the grooves (see Castera et al's Fig. 1).

In other words, Castera et al's grooves are parallel to the channeled magnetic field, in contradistinction to Applicants' claimed gaps and walls. The Castera et al patent fails to teach or suggest cutting the magnetic layers by intervals perpendicular to the field Ha or Hb. Instead, the grooves 3a, 4a, 3b, 4b are parallel to the field so that no demagnetizing field is created, no reduction of permeability is obtained and no increase of the frequency limit is produced. Therefore, the Castera et al patent fails to teach every element of the claimed invention, and Applicants claims are non-obvious over the Castera et al patent.<sup>8</sup>

Furthermore, there is no "substantial evidence" within the record,<sup>9</sup> nor "clear and particular" evidence<sup>10</sup> of a suggestion, teaching, or motivation to modify the Castera et al's teachings to

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<sup>8</sup>See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

<sup>9</sup>In re Gartside, 203 F3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000) (holding that, consistent with the Administrative Procedure Act at 5 USC 706(e), the CAFC reviews the Board's decisions based on factfindings, such as 35 U.S.C. § 103(a) rejections, using the 'substantial evidence' standard because these decisions are confined to the factual record compiled by the Board.)

<sup>10</sup>In re Dembiczak, 175 F3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, although 'the suggestion more often comes from the teachings of the pertinent references.' The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular." ) (emphasis added).

arrive at Applicants' claimed invention. Therefore, a person of ordinary skill in the art would not have been motivated and would not have found it obvious to perform such modification.

The present amendment is submitted in accordance with the provisions of 37 C.F.R. § 1.116, which after Final Rejection permits entry of amendments placing the claims in better form for consideration on appeal. As the present amendment is believed to overcome outstanding rejections under 35 U.S.C. § 112, second paragraph and 35 U.S.C. § 103, the present amendment places the application in better form for consideration on appeal. It is therefore respectfully requested that 37 C.F.R. § 1.116 be liberally construed, and that the present amendment be entered.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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